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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/446,538	12/27/99	LAUPER	F 990372

IM62/0521

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EXAMINER	
MCHENRY, K	
ART UNIT	**PAPER NUMBER**
1725	7

DATE MAILED: 05/21/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary	Application No.	Applicant(s)	
	09/446,538	LAUPER, FRITZ	
	Examiner	Art Unit	
	Kevin L McHenry	1725	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *10-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *10-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

15) ☒ Notice of References Cited (PTO-892)
16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
18) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
19) ☐ Notice of Informal Patent Application (PTO-152)
20) ☐ Other:

Drawings

1. The subject matter of this application admits of illustration by a drawing to facilitate understanding of the invention. Applicant is required to furnish a drawing under 37 CFR 1.81. No new matter may be introduced in the required drawing. Drawings were not submitted with the application.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claim 10 rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claim 10 recites the limitation of moving the mold toward the mold, lifting the mold, and pivoting the mold. The specification does not discuss or disclose means of moving a mold in terms of a translational movement, lifting movement, or pivoting movement. However, the specification does disclose means of performing these kinds of movements for a teeming ladle relative to a stationary mold.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 10 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which

applicant regards as the invention. As noted above, claim 10 cites limitations of moving a mold, including "moving the mold toward the mold". This language is indefinite and requires clarification.

For examination purposes, the examiner interpreted the limitations of claim 10 to mean moving the ladle toward the mold in a second direction substantially normal to the first direction; lifting the ladle in a direction substantially vertically relative to the first and second directions; and pivoting the ladle about an axis extending substantially normal to the second direction.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 10-17 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 08141732 in view of Sato (U.S.P. 4,112,998) and Mutschlechner et al. (U.S.P. 4,817,919).

JP 08141732 teaches a process of controlling the movement and pouring of molten metal from a ladle teeming machine to a mold. The teeming machine is comprised of a carriage that moves in a direction relative to the casting molds and a second carriage mounted upon the first that moves in a direction normal to the direction of the first carriage. The ladle is movable in a first direction parallel to the movement of

the mold, with an independent motor for impelling the ladle in this direction, is movable in a second direction normal to the first direction, with a second independent motor for moving the ladle in this direction, and the ladle can be pivoted about an axis extending normal to the second direction by third independent motor. This reference also teaches that the motors are controlled through programmable electronic means by used predetermined values for amounts of molten metal to be teemed and comparing actual, measured values of teemed metal weights to the predetermined values. The ladle has a spout that defines the fulcrum for pivoting the ladle. JP 08141732 also teaches that the teeming machine includes a vertical retaining means with a suspension plate that is mounted on the means (see JP 08141732; particularly the abstract and figures).

JP 08141732 does not teach that the ladle can be lifted in a vertical direction or that a second teeming machine is adjacent to the first teeming machine for continuing teeming when the first ladle is empty. This reference does not teach that the suspension plate the ladle is attached to is pivotable with the ladle. Nor does this reference teach that the suspension plate and ladle are provided with complementary mounting brackets for removably mounting the ladle on the plate or that the ladle includes a slag brick mounted adjacently to the spout stone.

Sato teaches a process of controlling the movements of a teeming machine relative to a linear array of molds. The teeming machine transports a ladle with a spout that has a teeming channel of a predetermined radius and includes means for lifting the ladle vertically in order to control the height that molten metal is poured from. Sato teaches that a second teeming machine can be used along with a first machine in order to continue casting uninterrupted when the first ladle empties. This reference also

teaches that the ladle is attached to suspension plates by complementary mounting brackets that allow removable mounting of the ladle and that a slag dam can be mounted adjacently to the pouring spout in order to prevent slag from entering the mold. Sato also teaches that this process can use a programmable, electronic control system for controlling the rate and stoppage of melt pouring in response to the signals of load cell. This load cell compares predetermined values to actual, measured values in order to control pour velocity and the amount of metal that is cast (see U.S.P. 4,112,998; particularly column 3, lines 20-58; column 7, lines 19-23; column 8, lines 29-34, 43-49; column 10, lines 11-32; column 12, lines 13-68; column 13, lines 1-6, 29-37, 48-52; column 14, lines 28-36, 48-68; column 15, lines 1-2; column 16, lines 62-68; column 17, lines 1-14, 67-68; column 18, lines 1-2, 21-26, 44-51, 65-68; column 19, lines 1-6).

Mutschlechner et al. teach a process of pouring molten metal that uses suspension plates that are attached to a ladle and that tilt with the ladle during pouring. Tilting arms are attached to the suspension plates and provide movement for the rotation of the plates and the ladle. This reference teaches that using these plates allows the ladle to tilt around either its own center of gravity in a small radius or around its spout in a large radius, providing flexibility during pouring operations (see U.S.P. 4,817,919; particularly column 1, lines 49-68).

It would have been obvious to one of ordinary skill in the art at the time that the applicant's invention was made to have modified the process of JP 08141732 by the teachings of Sato and Mutschlechner et al. One would be motivated to do so in order to implement uninterrupted casting, prevent slag from entering the mold, and to control

the pouring height, as Sato teaches, and to tilt the suspension plate to allow different radii of pouring, as Mutschlechner et al. teaches.

7. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 08141732 in view of Sato (U.S.P. 4,112,998) as applied to claims 1-17 and 19 above, and further in view of Szadkowski (U.S.P. 5,170,915).

The former references teach the process as described above. However, these references do not teach that the ladle is provided with an exchangeable spout stone.

Szadkowski teaches a metallurgical pouring device that uses an exchangeable spout so that it can be replaced quickly to provide for manufacturing efficiency (see U.S.P. 5,170,915; particularly column 1, lines 5-19).

It would have been obvious to one of ordinary skill in the art at the time that the applicant's invention was made to have modified the process described above by the teachings of Szadkowski to use an exchangeable spout stone. One would be motivated to do so in order to provide manufacturing efficiency, as Szadkowski teaches.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin L McHenry whose telephone number is (703) 305-9626. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas G Dunn can be reached on (703) 308-3318. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-6078 for regular communications and (703) 305-6078 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Kevin McHenry

May 17, 2001

Tom Dunn

TOM DUNN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700